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Number 64

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"Avtomatika i Telemekhanika" (Automechanics and Telemekhanics) Cards 51-55	Vol IX No 2	Mar/Apr 1948
"Biokhimiya" (Biochemistry) Cards 23-28, 58-61	Vol XIII No 1	Jan/Feb 1948
"Neftyanoye Khozyaystvo" (Petroleum Economy)* Cards 29, 75-83	No 4	Apr 1948
"Prikladnaya Matematika i Mekhanika" (Applied Mathematics and Mechanics) Cards 57, 86-88	Vol XII No 2	Mar/Apr 1948
"Radiotekhnika" (Radio Engineering) Cards 48, 56, 101-105	Vol III No 1	Jan/Feb 1948
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"Zhurnal Obshchey Khimii" (Journal of General Chemistry) Cards 30-47, 73	Vol XVIII No 1	Jan 1948
"Zhurnal Prikladnoy Khimii" (Journal of Applied Chemistry) Cards 1-4, 63, 74, 100	Vol XXI No 1	Jan 1948
"Zhurnal Prikladnoy Khimii" (Journal of Applied Chemistry) Cards 5-14	Vol XXI No 2	Feb 1948
"Zhurnal Tekhnicheskoy Fiziki" (Journal of Technical Physics) Cards 49, 50, 62, 89-99	Vol XVIII No 4	Apr 1948

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RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Chemistry - Cement Chemistry - Calcium Sulfate "Effect of TeTs-Cement on the Binding Properties of Various Modifications of Calcium Sulfate," P. P. Budnikov, Yu. M. Butt, 7 pp "Zhur Prik Khim" Vol XXI, No 1 Subject cement speeds up hydration of calcium sulfate and increases its hardness and water resistance. Hardening of semihydrated and anhydrous cements goes on best in air media, and takes approximately 7 days. Humid climates cause setting to take place in about 28 days. Cements containing gypsum set faster than ordinary cements. Submitted 28 Mar 1947. FDB 64T1	USSR/Chemistry - Nitro Compounds Chemistry - Freezing Points "Freezing Temperatures for Nitro Oleums," M. Sh. Gel'fman, 5½ pp "Zhur Prik Khim" Vol XXI, No 1 Determination of freezing temperatures made it possible to determine component ratios most suited for operations. Tests conducted to explain observed conditions of freezing temperatures. Submitted 3 Dec 1946. FDB 64T2	
USSR/Chemistry - Alkali Metal Nitrates Chemistry - Thermal Analysis "Thermal Capacity of Alloys of Nitrites and Sodium and Potassium Nitrates," N. K. Voskresenskaya, G. N. Yankovskaya, V. Ya. Anosov, Inst of Gen and Inorg Chem, Acad Sci USSR, 7½ pp "Zhur Prik Khim" Vol XXI, No 1 Describes part of the complex studies being conducted at the Lab of Fused Salts, Inst of Gen and Inorg Chem, under Prof A. G. Bergman. Main object was to determine nature of liquid phase which would fulfill requirements of HTS. Studies on thermal capacity of the lower limits of smelting. Submitted 8 Mar 1947. FDB 64T3	USSR/Chemistry - Absorption Chemistry - Sorption "The Theory of Chemosorption," M. Ye. Pozin, Leningrad Technol Inst, 23½ pp "Zhur Prik Khim" Vol XXI, No 1 Discusses theoretical principles of scrubber absorption. Explains differential equations for the kinetics of the scrubber process of absorption and chemisorption. Gives speed of absorption, controlling properties of gaseous and liquid states, and effect of temperature on speed of absorption. Submitted 30 Sep 1947. FDB 64T4	
USSR/Chemistry - Adsorption Chemistry - Isotherms "The Conversion of Adsorption Isotherms," G. V. Vinogradov, 4 pp "Zhur Prik Khim" Vol XXI, No 2 Describes calculations necessary to compute characteristic curves for two different materials in graph form. Submitted 27 Oct 1946. FDB 64T5	USSR/Chemistry - Xylydines, Isomers of Chemistry - Precipitation "Precipitation of m-4 and p-Xylydines from Commercial Mixtures of Isomers, VI," A.A. Spryskov, Ivanovo Chem Technol Inst, 8 pp "Zhur Prik Khim" Vol XXI, No 2 Determined dissociation constants for xylydine isomers and studies of the method of propagation of isomers by hydrogen chloride in organic solutions. Method separates m-4-xylydine by hydrogen chloride from commercial mixtures. Results in 90% pure m-4-xylydine and about 50% by amount from the original solution. Submitted 24 Jan 1947. FDB 64T6	
USSR/Chemistry - Indicators Chemistry - Alkalimetry "Alkalimetric Identification of Carbazole-2,3,6,8-Tetra-Sulfo Acids," V. F. Borodkin, T. V. Mal'kova, Ivanovo Chem Technol Inst, 2 pp "Zhur Prik Khim" Vol XXI, No 2 Describes subject method in the presence of isomers of carbazole sulfo acid and sulfuric acid. Submitted 2 Jun 1947. FDB 64T7	USSR/Chemistry - Peat, Acid Oils of Chemistry - Sorption "Chemosorption Method of Research on Hematomelanic Acids," T. A. Kukhareenko, Inst of Fuel, Acad Sci USSR, 7½ pp "Zhur Prik Khim" Vol XXI, No 2 Chemosorption and methylation methods were used to determine characteristics of hematomelanic acids in coals and peat. Determined that from the chemical standpoint subject acid was closely related to humic acid. Satisfactory correlation of data obtained from both test methods confirmed the fact that the methylation method can be used to determine the characteristics of hematomelanic acid. Submitted 24 Jan 1947. FDB 64T8	

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USSR/Chemistry - 2-Butene, 1,3-Dichloro Feb 1948
Chemistry - Chlorination

"Preparation of Hexachloroethane and Carbon Tetrachloride From 1,3-Dichloro-2-Butene," A. N. Akopyan, G. T. Esayan, V. Martirosyan, Cent Sci Res Lab, Works imeni S. M. Kirov, 4 $\frac{1}{2}$ pp

"Zhur Prik Khim" Vol XXI, No 2

Destructive chlorination of 1,3-dichloro-2-butene, formed as a by-product of hydrochlorination of monovinylacetylene to chloroprene, was carried out in the presence of activated carbon at 450° C at rates of flow of chloride of 20-22 l/hr and dichlorobutene of

FDB 64T9

USSR/Chemistry - 1,3-Butadiene Feb 1948
Chemistry - Polymerization

"Polymerization of Divinyl by Sodium in the Presence of Carbon Monoxide," I. V. Rokityanskiy, All-Union Order of Labor Red Banner Sci Res Inst of Synthetic Rubber imeni Academician S. V. Lebedev, 6 $\frac{1}{2}$ pp

"Zhur Prik Khim" Vol XXI, No 2

Continuing previous study, it was found that carbon monoxide pronouncedly inhibits polymerization of 1,3-butadiene by sodium and at above 0.6 mole % of carbon monoxide, no polymerization by sodium,

FDB 64T10

USSR/Chemistry - 2-Butene, 1,3-Dichloro Feb 1948
(Contd)

5.3-5.7 g/hr (20% excess chlorine) and gave an average of 73%, and up to 80%, theoretical yields of products, among them about 75% hexachloroethane and the rest carbon tetrachloride. Increase of temperature to 600° probably would raise the yield of carbon tetrachloride. Submitted 11 Jan 1947.

FDB 64T9

USSR/Chemistry - 1,3-Butadiene (Contd) Feb 1948

but rather autopolymerization of butadiene to spongy product takes place, and this process is much more rapid at 60° than at 20-25°. Effect is similar to that produced by carbon dioxide, the mechanism of the two processes being similar. When moisture is present, carbon monoxide is combined by the caustic alkali formed and does not affect polymerization.

FDB 64T10

USSR/Chemistry - Naphthalene, Polyalkyl Feb 1948
Chemistry - Synthesis

"Synthesis and Properties of Polyalkyl Naphthalenes, III," D. N. Andreyev, A. D. Petrov, Inst of Org Chem, Acad Sci USSR, 5 pp

"Zhur Prik Khim" Vol XXI, No 2

Continuing the study of alkylation of naphthalene by the Friedel-Crafts reaction, it was shown that naphthalene reacts with olefins, as well as alkyl halides, at temperatures as low as -10°, giving relatively pure products. In the case of tetralin, side reactions take place. Alkylated compounds are mixtures of α - and β -substituted isomers. Crystalline substances

FDB 64T11

USSR/Chemistry - Gasoline Feb 1948
Chemistry - Spectra, Absorption

"Analysis of Gasoline Based on Ultraviolet Absorption Spectra," A. E. Shtandel', Yu. V. Shostenko, 11 $\frac{1}{2}$ pp

"Zhur Prik Khim" Vol XXI, No 2

Discussion of Jostes' method is followed by study of absorption curves of pure aromatic hydrocarbons of the gasoline boiling range and selection of wave lengths and values of molecular absorption coefficients suitable for the analysis. Compounds studied included benzene, toluene, all xylenes, ethylbenzene, pseudocumene, m-diethylbenzene and propyl-

FDB 64T12

USSR/Chemistry - Naphthalene, Polyalkyl Feb 1948
(Contd)

were isolated only in two cases, and the X-ray analysis showed the compounds formed to be 2,6-diocetyl-naphthalene, mp 182-183°, and one of its β , β' isomers, mp 126°. In addition to the physical constants listed below, n is also given at 50° and d at 50, 75, 100 and 125°. Submitted 28 Mar 1947.

FDB 64T11

USSR/Chemistry - Gasoline (Contd) Feb 1948

benzene. Data for compounded mixtures show higher degree of precision obtainable with the authors' "planometric" method, based on measuring the area formed by the absorption curve with the abscissa representing the wave lengths plotted against the altitude of the absorption curve of the mixture, than that obtainable by Jostes' method. A rapid method not requiring complete absorption curve of the sample was also developed. Submitted 5 Aug 1946.

FDB 64T12

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USSR/Chemistry - Sulfonation Chemistry - Cymene	Feb 1948	USSR/Chemistry - Cyanohydrins Chemistry - Acetylation	Feb 1948
"Sulfonation of Cymene With Chlorosulfonic Acid," M. S. Malinovskiy, G. K. Barabashova, Lab of Org Chem, Gor'kiy State U, 2 pp		"Acetylation of Alpha-Cyanohydrins," A. Ya. Yaku- bovich, V. A. Rubenko, Ye. N. Merkulova, 5 pp	
"Zhur Prik Khim" Vol XXI, No 2		"Zhur Prik Khim" Vol XXI, No 2	
Cymene was sulfonated with chlorosulfonic acid within 0 and 25°; the temperature did not exert an apprecia- ble effect on the yield. The resulting sulfonyl chloride with the SO ₂ Cl group in the ortho position with respect to the methyl group was not isolated, but upon fusion with caustic soda, carvacrol was ob- tained in yields reaching 51.5%. Submitted 26 Jun 1947.	FDB 64T13	Studies of acetylation of alpha-cyanohydrins of acetic acid with acetyl chloride and ketone. Deter- mined that acetylation was better with ketone as the output of acetate was 73% of the computed amount. Submitted 27 Oct 1946.	FDB 64T14
USSR/Chemistry - Gases, Reactions of Chemistry - Kinetics	Feb 1948	USSR/Chemistry - Solubility, Equation of Chemistry - Organic Compounds	Feb 1948
"Kinetics of Gas Chemical Reactions in a Current," G. M. Panchenkov, Petroleum Inst imeni Academician Gubkin, Moscow, 7½ pp		"A Check of the General Equation of Solubility," V. K. Semenchko, Moscow State U imeni M. V. Lomonosov, M. I. Shakhparonov, Lab of Phys Solu- tions, Moscow, 11½ pp	
"Zhur Fiz Khim" Vol XXII, No 2		"Zhur Fiz Khim" Vol XXII, No 2	
Gives general method for setting up differential equations for rapid reactions occurring in current, of homogeneous as well as heterogeneous nature, in the kinetic field of their activity. Examples show the basis for the differential equations for reaction speeds and their integration with the intent to deter- mine the speed constant. Submitted 26 May 1947.	FDB 64T15	Previously submitted equations for solubility were confirmed on the basis of experimental data obtained during studies on the organic bonds of the aromatic series, aliphatic series, and weak, average, and strong electrolytes and elements having dipole	FDB 64T16
USSR/Chemistry - Heat of Hydration Chemistry - Alkali Metals	Feb 1948	USSR/Chemistry - Solubility, Equation of (Contd)	Feb 1948
"Heat of Hydration of Ions of Alkali Metals and Hal- oids," Ye. N. Gapon, Agr Acad imeni K. A. Timiryazev, Moscow, 11 pp		moments. In all cases there was noted a similarity. Only results obtained from Ba(ClO ₄) did not agree with the others. Submitted 17 Jun 1947.	
"Zhur Fiz Khim" Vol XXII, No 2			
Studies of heat of hydration of simple single valent ions with configurations of inert gases showed that this phenomenon has great significance in solution of the problem for calculating the absolute heat of hydration of ions. Also disproves the reliability of some contemporary methods for calculating the absolute heat of hydration of ions. Submitted 28 May 1947.	FDB 64T17		FDB 64T16
USSR/Chemistry - Carbon Chemistry - Valency, State of	Feb 1948	USSR/Chemistry - Electrolysis Chemistry - Polarization	Feb 1948
"The Valence States of the Carbon Atom," M. A. Kovner, Chair of Theoretical Phys, Saratov State U, 2½ pp		"A New Method of Investigating Polarization Curves," A. T. Vagramyan, Inst of Phys Chem, Acad Sci USSR, Moscow, 4 pp	
"Zhur Fiz Khim" Vol XXII, No 2		"Zhur Fiz Khim" Vol XXII, No 2	
In the approximation where no account is taken of the resonance of the state s ² p ² , the energy exciting the C atom in valence state is similar for all organic molecules, and takes on certain values as shown in one of the tables established by authors. Molecules whose symmetry falls into group T _d have an energy that can be determined as the lowest root of Voge's seventh series equation. Submitted 12 Apr 1947.	FDB 64T18	Given method brings about departure of the change of the electrode surface at the time of electrolysis, with significant decrease of the degree of concen- trated polarization. This permits the plotting of graph with simple data. Method can be used to cal- culate chemical polarization. Submitted 10 Jun 1947.	FDB 64T19

RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Chemistry - Ammonia Chemistry - Oxidation "Oxidation of Ammonia on Grids of Platinum and Platinum-Rhodium Alloys, II," L. Apel'baum, Phys Chem Inst imeni L. Ya. Karpov; M. Temkin, Lab of Chem Kinetics, Moscow, 12½ pp "Zhur Fiz Khim" Vol XXII, No 2 Show that the kinetics of the reaction of contact oxidization of ammonia on platinum and platinum-rhodium alloys has diffused character. Formulas for determining the amount of processed ammonium with relation to the speed of the gas mixture, geometric character of the grids and the number of grids used. FDB 64T20	USSR/Chemistry - Ammonia Chemistry - Oxidation "Oxidation of Ammonia on Grids of Platinum and Platinum-Rhodium Alloys, I," L. Apel'baum, Phys Chem Inst imeni L. Ya. Karpov; M. Temkin, Lab of Chem Kinetics, Moscow, 18 pp "Zhur Fiz Khim" Vol XXII, No 2 Subject process was studied at atmospheric pressure. Velocity of the air-ammonia mixtures and the number of grids varied widely. Determined that when the reaction was conducted on one grid at great gas-mixture velocities, considerable quantity of un-processed ammonia was present in resultant gases. Submitted 25 Mar 1947. FDB 64T21	
USSR/Chemistry - Ammonia (Contd) Feb 1948 Temperature of the grids has great effect on the reaction when the gas mixture velocity is high. Submitted 25 Mar 1947. FDB 64T20	USSR/Chemistry - Analysis Chemistry - Oxidation Feb 1948 "The Kinetic Method of Physical and Chemical Analysis, V," V. A. Shushunov, Z. Zouzolkova, Chair of Phys Chem, Gor'kiy State U, 4 pp "Zhur Fiz Khim" Vol XXII, No 2 Determined that the speed of the reaction of oxidizing liquid mixtures of organic compounds by air depends on the nature of the mixture. Pure compounds were found to oxidize much slower than their mixture forms. Show that molecular compounds formed in binary systems are all satisfied by FDB 64T22	
USSR/Chemistry - Tea Chemistry - Enzymes Jan/Feb 1948 "Oxidizing Ferments of Tea Leaves," M. A. Bokuchava, T. A. Shubert, V. R. Popov, Inst of Biochem imeni A. N. Bakh, Acad Sci USSR, Moscow, 8 pp "Biokhim" Vol XIII, No 1 Object was to study more closely the soluble and un-soluble forms of tea leaf ferments, and to determine the possibility of their replacement conversion and their relation to various substrata. Submitted 27 May 1947. FDB 64T23	USSR/Chemistry - Analysis (Contd) Feb 1948 single point on the graph curve representing the induction period. Seven compounds representing three binary systems were studied. Submitted 27 May 1947. FDB 64T22	
USSR/Chemistry - Gallic Acid Chemistry - Tea, Tannins in Jan/Feb 1948 "Gallic Acid in Composition With Tea Tannin," A. L. Kursanov, K. M. Dzhemukhadze, Inst of Biochem imeni A. N. Bakh, Acad Sci USSR, Moscow, 5 pp "Biokhim" Vol XIII, No 1 Show that free and ester-bonded gallic acid is present in the leaves of all tea family shrubs grown in Georgia. Tests to determine the comparative amounts of free and compounded gallic acid present in green leaves, and the black tea obtained from these green leaves. Submitted 11 Jun 1947. FDB 64T24	USSR/Chemistry - Adenosinediphosphoric Acids Chemistry - Isomerase Jan/Feb 1948 "The Existence of 'Isomerases of Adenosinediphosphoric Acid'," A. V. Kotel'nikova, Lab of Carbohydrates, Inst of Biol and Med Chem, Acad Med Sci USSR, Moscow, 10 pp "Biokhim" Vol XIII, No 1 Water extracts of partially purified isomerases of adenosinediphosphoric acids (ADF), as well as completely purified ADF contain myokinase. Damping effect of Mg on the ATF or adenosinetriphosphate FDB 64T25	

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USSR/Chemistry - Lipoxidase Chemistry - Oxidation	Jan/Feb 1948	USSR/Chemistry - Adenosinediphos- phoric Acids (Contd) Jan/Feb 1948
"The Mechanism of the Action of a Peroxidizing Ferment (Lipoxidase)," D. M. Mikhlin, K. V. Pshennova, Inst of Biochem imeni A. N. Bakh, Acad Sci USSR, Moscow, 3 pp		effect of myosine is noticeable during the fission of ADF by myosine in the presence of myokinase. Adenylic acid is formed when ADF is acted upon by its isomerases. Submitted 10 Jul 1947.
"Biokhim" Vol XIII, No 1		
Separation of lipoxidase from soybeans showed the complex nature of the composition of this ferment. Activating enzyme was self-oxidizing in conditions where lipoxidase was active. Small additions of dibenzoyl peroxide speeded up the autoxidation of the		
FDB	64T26	FDB 64T25
USSR/Chemistry - Lipoxidase (Contd) Jan/Feb 1948		USSR/Chemistry - Pyruvic Acid Jan/Feb 1948 Chemistry - Condensation, Chemical
so-called activating enzyme. Primary peroxides in the form of initiators of chain reaction were noticed in the ferment itself. Submitted 21 Jul 1947.		"Condensation of Pyroracemic Acid in the Presence of Glyccol," A. M. Kuzin, Inst of Biochem imeni A. N. Bakh, Acad Sci USSR; A. R. Guseva, Moscow Lab of Chem of Plant Matter, 4½ pp
		"Biokhim" Vol XIII, No 1
		Important position occupied by pyroracemic acid in the process of the metabolism of carbons, makes it clear that in the living organism it can serve as that basic material which when synthesized will produce the more complex materials having longer carbon
FDB	64T26	FDB 64T27
USSR/Chemistry - Synthesis Chemistry - Amino Compounds	Jan/Feb 1948	USSR/Chemistry - Pyruvic Acid (Contd) Jan/Feb 1948
"The Formation of Amino Nitrogen From Ammonium and Alpha-Keto Acids in Suspensions of B. Subtilis," A. S. Konikova, M. G. Kritsman, L. M. Yakobson, Lab of Chem of Nitrogen Replacement, Inst of Biol and Med Chem, Acad Med Sci USSR, Moscow, 2½ pp		chains and possessing acyclic or cyclic structures. Brief description of tests conducted. Submitted 28 Apr 1947.
"Biokhim" Vol XIII, No 1		
Results of studies conducted to determine the effects of aminization of suspensions of B. subtilis with pyroracemic acid, alpha-ketoglutaric acid, and phenylpyroracemic acid. Submitted 13 May 1947.		
FDB	64T28	FDB 64T27
USSR/Chemistry - Olefins Chemistry - Boiling Points	Apr 1948	USSR/Chemistry - Alkaloids Chemistry - Poppy Jan 1948
"The Boiling Point of Compounds of the Aliphatic Series," N. S. Kozlov, Molotov, 5 pp		"Alkaloids of Wild Species of Poppies: VIII, Alkaloids of Papaver Bracteatum," V. V. Kiselev, R. A. Konovalova, Alkaloid Sec, Inst of Pharmacol, Chemotherapy, and Pharm Chem, 9 pp
"Neft Khoz" No 4		"Zhur Obshch Khim" Vol XVIII (LXXX), No 1
Previously determined similarities in variations of boiling temperatures of alkenes permit study of their boiling temperatures. Tabulates theoretical and actual boiling temperatures for some 120 alkenes.		Four basic phenol crystals were obtained from Papaver bracteatum: isothebaine, oripavine, and two new alkaloids, bractein C ₁₉ H ₂₁ O ₄ N and bractamine C ₁₁ H ₁₅ O ₂ N. Complete formulas for bractein and bractamine can be written in the following form: C ₁₆ H ₁₀ (NCH ₃)(OCH ₂) ₂ (OH) ₂ and C ₉ H ₈ (NCH ₃)(OCH ₂)(OH). Submitted 25 Oct 1946. FDB 64T30
LC	64T29	

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USSR/Chemistry - Alkyl Chlorides Chemistry - Chlorine Substitution	Jan 1948	USSR/Chemistry - Iodine Chlorides Chemistry - Conductivity, Electric
"Research in the Field of Chlorine Derivatives: II, Effect and Order of Substitution of Hydrogen Atoms by Chlorine in Chloroalkyls," D. Tishchenko, N. Zhokhovets, 8½ pp		"Thermal Dissociation and Electrical Conductivity of Iodine Chloride in a Fused State," Ya. A. Fialkov, O. I. Shor, Inst of Gen and Inorg Chem, Acad Sci USSR, 4 pp
"Zhur Obshch Khim" Vol XVIII (LXXX), No 1		"Zhur Obshch Khim" Vol XVIII (LXXX), No 1
Studies of the effects of chlorine on 1 and 2 chloropentane. Observed that amount of dichlorides obtained agreed completely with theoretical calculations. Theory of alternating polarity does not apply to subject studies. Chemical inertness of boundary polyfluorides and poly-chloro-fluorides is partial vicinal effect. Submitted 3 Jan 1947.	64T31	Electrical conductivity measured at temperatures of 35-97°, and dissociation curves showed that dissociation into iodine and chlorine begins to take place at temperatures of 65-70°. Thermal decomposition of chlorous iodine is reverse process. Submitted 15 Dec 1946.
USSR/Chemistry - Zirconium Oxides Chemistry - Catalysis	Jan 1948	USSR/Chemistry - Indicators Chemistry - Hydrogen Ion Concentration
"Catalytic Properties of Oxides of Hafnium and Zirconium," S. B. Anisimov, G. I. Khaidarov, 4 pp		"Determination of the Concentration of Hydrogen Ions by a Nonfading Scale," K. V. Flerov, B. V. Ozimov, Leningrad Chem Technol Inst of the Dairy Ind, 4 pp
"Zhur Obshch Khim" Vol XVIII (LXXX), No 1		"Zhur Obshch Khim" Vol XVIII (LXXX), No 1
Catalytic properties of these two oxides were tested on decomposition of ethanol of 95.5% purity. Analyses of the gaseous products revealed nearly identical activities, which are destroyed almost completely by heating above 500°. Dehydration is the principal effect in both cases, but this is attended by several side reactions, such as dehydrogenation, formation of ethers and esters, etc. Submitted 9 Dec 1946.	64T33	Subject scale with mineral salts imitates results obtained from Bogen's universal scale for solutions with 2-10 pH. Accuracy of nonfading scale is ±0.1 pH. This method has proven itself to be a reliable method for judging pH. Submitted 9 Dec 1946.
USSR/Chemistry - Alcohols, Acetylene Chemistry - Dehydration	Jan 1948	USSR/Chemistry - Synthesis Chemistry - Phenylthiophene
"Study of Ternary Acetylene Alcohol Containing the Neopentyl Group--Methyl-Ternary-Butylacetylinecarbinol," I. A. Favorskaya, Chair of Structure of Org Compounds, Leningrad State Order of Lenin U, 8 pp		"Study of the Reaction of Sulfur With Unsaturated Compounds: II, Synthesis of Beta-Phenylthiophene and Its Homologs," M. G. Voronkov, A. S. Brown (Deceased), Chair of Org Chem, Leningrad State Order of Lenin U, 6½ pp
"Zhur Obshch Khim" Vol XVIII (LXXX), No 1		"Zhur Obshch Khim" Vol XVIII (LXXX), No 1
Determined the inertness of methyl-ternary-butylacetylinecarbinol in the reaction of halogen substitution for hydroxyls. Dehydration of subject compound produced 4,4-dimethyl-3-methenepentane-1. Proven that in dehydration of subject compound there is no regrouping of the carbon structure. Submitted 30 Dec 1946.	64T35	Show that as result of the reaction of 2-methyl-3-phenylbutadiene-1.3 and sulfur there is formed beta-phenyl-beta'-thiotolene. There is also the possibility of forming beta-phenylthiophene from the action of sulfur on di-butylbenzole. Submitted 23 Dec 1946.
USSR/Chemistry - Petroselinic Acid Chemistry - Nitrogen Oxides	Jan 1948	USSR/Chemistry - Acrylonitrile Chemistry - Synthesis
"Reaction of Nitrogen Oxide on Unsaturated Acids of the Series C _n H _{2n-2} O ₂ : I, Reaction of N ₂ O ₃ on Petroselinic Acid," N. V. Vil'yams (Deceased), S. V. Vasil'yev, Lab of Org Chem imeni Academician H. Ya. Dem'yanov, Moscow Order of Lenin Agr Acad-imeni K. A. Timiryazev, 5 pp		"Synthesis With Nitrile of Acrylic Acid: VII, N-Ethyl-N-Phenyl-Beta-Aminopropionitrile and Some of Its Derivatives," A. P. Terent'yev, A. N. Kost, V. M. Potapov, Lab of Org Chem imeni Academician N. D. Zelinskiy, Moscow State U, 5 pp
"Zhur Obshch Khim" Vol XVIII (LXXX), No 1		"Zhur Obshch Khim" Vol XVIII (LXXX), No 1
The ethyl bond in petroselinic acid completely saturates N ₂ O ₃ . Obtained crystalline and liquid nitrosite of petroselinic acid. In the first group NO ₂ and NO bonded with carbon in the form of a pseudonitrosite.	64T37	On samples of ethylaniline, studies were made of the reaction of condensation of acrylonitrile with aromatic amines. Show that better results are obtained, up to 70% of calculated production, when components are heated in the presence of acetic
FDB		FDB

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FDB Periodical Abstracts Scientific No 64

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USSR/Chemistry - Petroselinic Acid (Contd) Jan 1948

It was not possible to obtain liquid nitrosite due to the energetic dissociation of nitrogen in the form of oxides. Submitted 4 Jan 1947.

FDB

64T37

USSR/Chemistry - 1,4-Naphthoquinone Jan 1948
Chemistry - Hydrazine

"Research in the Field of Compounds of Quinoid Structure: II, Reaction of Some Bisulfite Derivatives of P-Naphthoquinone With Substituted Hydrazines," D. A. Bochvar, Ye. I. Vinogradova, Yu. B. Shvetsov, M. M. Shemyakin, Lab of Org Chem, Inst of Biol and Med Chem, Acad Med Sci USSR, and Chair of Anal Chem, Moscow Textile Inst, 11 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 1

Study the interrelationship of various types of p-naphthoquinone derivative bisulfites containing replaceable hydrazines, and observe the properties of

FDB

64T39

USSR/Chemistry - 1,4-Naphthoquinone (Contd) Jan 1948

the hydrazines formed. Show fallacies contained in formulas suggested by Palladin for bisulfite produced 2-methyl-1,4-naphthoquinone and by Ufimtsev for bisulfite produced 2-methyl-1,4-naphthoquinone-3-sulfonate. Submitted 14 Jan 1947.

FDB

64T39

USSR/Chemistry - Synthesis Jan 1948
Chemistry - Ketone, Isobutyl Tetraalkyl

"Synthesis of Isobutyl Tetraalkyl Ketone," S. L. Gusinskaya, G. A. Gol'dberg (Student), Lab of Org Chem, Cent Asiatic State U, 12 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 1

Fridel-Craft's method of condensation of chloranhydrides of isovaleric acid with tetraalkyl produced 64% of calculated production of beta-isobutyltetraalkylketone. Clemens' method of reducing beta-isobutyltetraalkylketone produced beta-isoamyltetraalkyl. Submitted 26 Dec 1946.

FDB

64T42

USSR/Chemistry - Acrylonitrile (Contd) Jan 1948

acid. Nature of the obtained N-ethyl-N-phenyl-beta-aminopropionitrile was saponified, and corresponded to products of amides and acids. Submitted 13 Jan 1947.

FDB

64T38

USSR/Chemistry - Sulfonation Jan 1948
Chemistry - Naphthalene

"Sulfonation Reaction: VIII, Heat of Sulfonation of Naphthalene," A. A. Spryskov, Chair of Org Chem, Ivanovo State Med Inst, 5 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 1

Calorimetric experiments show that the heat of sulfonation of naphthalene at 16-20°, when α -acid is predominantly formed, amounts to 5.07 kilocal/mole liquid initial stock. Heat of hydration of the α acid is 5.7 kilocal/mole. Submitted 6 Nov 1946.

FDB

64T40

USSR/Chemistry - Synthesis Jan 1948
Chemistry - Benzene, Alpha-Bromoethyl

"Laboratory Synthesis of Alpha-Bromoethylbenzene," G. B. Tal'kovskiy, 1 p

"Zhur Obshch Khim" Vol XVIII (LXXX), No 1

Bromination of ethylbenzole until alpha-bromoethylbenzole is obtained can best be carried out on the vapor phase. Submitted 17 Feb 1947.

FDB

64T41

USSR/Chemistry - Tetralin Jan 1948
Chemistry - Alkylation

"Condensation of Aromatic Compounds With Alcohols in the Presence of Aluminum Chloride and Other Reagents: XIV, Amyltetralins," A. N. Tatarenko and I. P. Tsukervanik, Lab of Org Chem, Cent Asiatic State U, 4 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 1

Alkylation of tetralin with primary, secondary and tertiary amyl alcohols in the presence of aluminum chloride, zinc chloride and phosphoric acid was studied under conditions described in previous installments of this series, and theoretical yields

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64T43

RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Chemistry - Nicotine and Derivatives Jan 1948 Chemistry - Spectra, Absorption	USSR/Chemistry - Tetralin (Contd) Jan 1948	
"Absorption Spectrum in Ultraviolet of Some Derivatives of Pyridine and Nicotine, II," O. N. Setkina, Ya. L. Danyushevskiy, Ya. L. Gol'dfarb, 10 pp	of 32-82% of amyltetralin were obtained, with considerable resinification taking place, although the temperature was kept within 100 and 175°, the duration at 1-9 hours and no excess of aluminum chloride was used. Best yields of β -amyltetralins, 80% theoretical, were obtained with zinc chloride in sealed tubes at 200°. Submitted 28 Oct 1946.	
"Zhur Obsheh Khim" Vol XVIII (LXXX), No 1		
No basic absorption lines were observed when beta-hydrogen atom was introduced into molecule of alpha-aminopyridine. Problem of the structure of alpha- and alpha'-aminonicotine salts can be determined from the absorption spectrum of these salts. Absorption spectrum of benzyl-alpha'-aminonicotine is very similar to that of 1-benzyl-6-amino-1.6 dihydronicotine. Submitted 15 Jan 1947.		
FDB 64T44	FDB 64T43	
USSR/Chemistry - Nicotine and Derivatives Jan 1948 Chemistry - Spectra, Absorption	USSR/Chemistry - Nicotine Jan 1948 Chemistry - Amino Derivatives	
"Absorption Spectrum in Ultraviolet of Some Derivatives of Pyridine and Nicotine, I," Ya. L. Gol'dfarb, O. N. Setkina, Ya. L. Danyushevskiy, 7½ pp	"Amino Derivatives of Metaninicine," Ya. L. Gol'dfarb, Ye. N. Karaulova, Inst of Org Chem, Acad Sci USSR, Moscow, 6½ pp	
"Zhur Obsheh Khim" Vol XVIII (LXXX), No 1	"Zhur Obsheh Khim" Vol XVIII (LXXX), No 1	
Absorption spectrum of alpha-aminopyridine is observed in part in the resonance of the type (IX (b,v,g)) pyridomine structure. Introduction of acetyl or phenyl groups into the amino group of alpha-aminopyridine results in confusion in the lines in the short-wave region of the spectrum. Data obtained	Mole for mole acetylation of alpha-aminometaninicine with acetic anhydride results in acetyl produced alpha-aminometaninicine. Alkali when acting upon iodomethyl alpha-aminometaninicine produces trimethyl and alpha-amino-(beta-butadenul)-pyridine. When alpha-aminometaninicine is hydrated in the	
FDB 64T45	FDB 64T46	
USSR/Chemistry - Nicotine and Derivatives Jan 1948 (Contd)	USSR/Chemistry - Nicotine (Contd) Jan 1948	
from study of the absorption spectrum of salts based on type alpha-aminopyridine can be used to answer questions on the structure of these salts. Submitted 15 Jan 1947.	presence of Pt/PtO ₂ according to Adam's method, one mole of hydrogen is absorbed resulting in obtaining alpha-aminodihydrometaninicine. Submitted 13 Dec 1946.	
FDB 64T45	FDB 64T46	
USSR/Chemistry - Heterocyclic Compounds Jan 1948 Chemistry - Synthesis	USSR/Electricity Jan/Feb 1948 Oscillographs, Cathode Ray - Applications Bridges, Electrical Measurement	
"Mechanism of the Formation of Condensed Heterocyclic Systems: I, Mechanism of the Formation of 2-Oxy-5.6-Divinylenelepidine (Alpha-Naphtho-Beta-Oxylepidine)," S. N. Khitrik, Lab of Org Chem, Mil Acad of Chem Defense of the Red Army imeni K. Ye. Voroshilov, 2½ pp	"The Application of Cathode-Ray Oscillograph for the Balance Indication of Bridges," V. S. Troitskiy, Engr, 8 pp	
"Zhur Obsheh Khim" Vol XVIII (LXXX), No 1	"Radiotekh" Vol III, No 1	
Beta-naphtho-2-oxy-4-methylquinoline can be obtained by simple thermal processing of one of the products of condensation of beta-naphthylamine with acetoacetic esters. The mechanism of this thermal treatment is	Studies problem of employing cathode ray oscillographs as an indicator in bridge measuring instruments. Gives analysis of conditions necessary for the independent operation of the bridge arms during balancing. Establishes bridge circuits taking into	
FDB 64T47	FDB 64T48	

RESTRICTED	FDB Periodical Abstracts Scientific No 64		RESTRICTED
USSR/Chemistry - Heterocyclic Compounds (Contd)	Jan 1948	USSR/Electricity (Contd)	Jan/Feb 1948
connected with the separation of one molecule of beta-naphthylamine, and is analogous to the mechanisms of the processing of 2-pyridilamide (2-pyridil)-aminocrotonic acid. Submitted 14 Dec 1946.		consideration the application of Lamson's method (H. W. Lamson, "The Review of Scientific Instruments," 1938 and "The General Radio Experimenter," 1939). On the basis of data obtained from the study of divided construction (of the bridge), a new circuit for coupling the indicator is developed, which method may be used in great variety of bridges, and at the same time fulfill established criteria. Submitted 19 Jun 1947.	
FDB	64T47	FDB	64T48
USSR/Electricity Oscillators, Electron Tube Circuits, Cathode	Apr 1948	USSR/Electronics Condensers Mathematics, Applied	Apr 1948
"Self-Modulation of a Self-Excited Tube Oscillator With Automatic Cathode Bias Circuit," N. A. Zhelez-tsov, Phys Tech Inst, Gor'kiy State U, 134 pp		"Accurate Solution of the Langmuir Problem for a Spherical Condenser," V. L. Kan, Leningrad Polytech Inst imeni M. I. Kalinin, 12 pp	
"Zhur Tekh Fiz" Vol XVIII, No 4		"Zhur Tekh Fiz" Vol XVIII, No 4	
Simplified formulas were used to study the tube oscillator having automatic cathode bias circuit. Determines terms for the amplitude of autooscillation operating on the linear section of the tube characteristics and explains conditions necessary for self-		Comments on solution to Langmuir's problem on the distribution of potential in spherical condenser where the current is limited by large discharge. Accurate solution, using Bessel's function, for boundary cases and description of the operations for derivation of formulas. Shows possibilities for generalizations. Submitted 6 Nov 1947.	
FDB	64T49	FDB	64T50
USSR/Electricity (Contd)	Apr 1948	USSR/Electronics Regulators, Electronic Frequency Stabilization	Mar/Apr 1948
modulation of the autooscillation. Shows necessity for "mild" self-modulation. Data obtained was confirmed by experiments. Photographs of phase trajectories were obtained for Van der Pol's planes with the aid of cathode ray oscillograph. Submitted 7 Oct 1947.		"Electronic Frequency Regulator," I. S. Bruk, S. S. Chugunov, N. V. Pautin, Energetics Inst imeni Acad-emician G. M. Krzhizhanovskiy, Acad Sci USSR, 8 pp	
		"Avtomat i Telemekh" Vol IX, No 2	
Describes electronic frequency regulator which has tuning fork serving as calibrator. Regulator utilizes 400-cycle oscillator frequency for stabilizing. Calculating tables submitted by the Energetics Inst can be applied to calculations for the above case. Percentage error in frequency stabilizing is about 0.1%. Submitted 22 Nov 1947.			
FDB	64T49	FDB	64T51
USSR/Electronics Measuring Instruments Synchronous Machines	Mar/Apr 1948	USSR/Electronics Regulators, Electronic Synchronous Machines	Mar/Apr 1948
"Application of Hooke's Coupling in Automatic Measuring Devices," V. I. Gostev, Moscow Automobile Works imeni Stalin, 7 pp		"Application of the Method of Logarithmic Frequency Characteristics to Research on the Stability and to Evaluation of the Quality of Servo and Regulating Systems," V. V. Solodovnikov, Inst of Automatics and Telemekh, Acad Sci USSR, 12 pp	
"Avtomat i Telemekh" Vol IX, No 2		"Avtomat i Telemekh" Vol IX, No 2	
Describes the principal systems of measuring instruments which utilize the electrical contact principle of operation. Use of Hooke's coupling permitted complex measuring operations with great reliability. Describes measurements on the perpendicular, parallel, and eccentric nature of surfaces when using Carden-type attachments. Submitted 4 Nov 1947.		Application of subject method to servo systems with open circuits to determine the stability and quality, which characterizes the maximum amplitude characteristic of system with closed circuit and the	
FDB	64T52	FDB	64T53

RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Electronics Regulators, Electronic Synchronous Machines "Some Structural Conditions of Stability in a System of Automatic Regulation," M. A. Ayzerman, Inst of Automatics and Telemekh, Acad Sci USSR, 12½ pp "Avtomat 1 Telemekh" Vol IX, No 2 Determination of structural conditions necessary to permit system of automatic regulation containing series of bells hooked up in series, to be made stable based on selected parameters. Theorem for the determination of such necessary conditions. Examples show practical application of the theories. Submitted 29 Oct 1947. FDB 64T54	USSR/Electronics (Contd) Mar/Apr 1948 interval for conductance of frequencies. MacColl's method of approximating logarithmic amplitude characteristics was used for calculations on servo systems. Submitted 21 Aug 1947. FDB 64T53	
USSR/Electronics Regulators, Electronic Synchronous Machines "Stability and Ratio of Stability in a System of Intermittent Regulation," Ya. Z. Tsypkin, Inst of Automatics and Telemekh, Acad Sci USSR, 21 pp "Avtomat 1 Telemekh" Vol IX, No 2 Criteria for the stability of systems of intermittent regulation, permitting simple quantitative and qualitative evaluation of the stability. Stability ratios for evaluation of processes occurring in systems of intermittent regulation. Method for calculating the FDB 64T55	USSR/Electronics Electrons - Motion Energy - Dissipation Jan/Feb 1948 "The Energy Dissipation of Electrons During Their Movement in a Rapidly Changing Homogeneous Electric Field," Prof M. S. Neyman, Dr Tech Sci, 19 pp "Radiotekh" Vol III, No 1 Investigates conditions of electronic motion between two parallel grids having long transit time. Submitted 13 Mar 1947. FDB 64T56	
USSR/Electronics (Contd) Mar/Apr 1948 stability of the latter. Studies of the resistance of intermittent regulating systems to temperature. This was studied for samples possessing feedback circuits, and those without feedback circuits. Submitted 3 Dec 1947. FDB 64T55	USSR/Mathematics - Analysis, Harmonic Mathematics - Curves Mar/Apr 1948 "An Accurate Method of Harmonic Analysis for Empirical Periodical Curves," M. G. Serebrennikov, Moscow, 6 pp "Prik Mat 1 Mekh" Vol XII, No 2 Describes new method that overcomes the usual deficiency of harmonic analysis--that of insufficient reliability of results obtained. Submitted 3 Jun 1947. FDB 64T57	
USSR/Medicine - Erythrocytes Chemistry - Zinc, Determination of Jan/Feb 1948 "Polarographic Method of Quantitative Determination of Zinc in the Erythrocytes of the Blood," A. A. Smirnov, Physiol Inst imeni I. P. Pavlov, Acad Sci USSR, 9 pp "Biokhim" Vol XIII, No 1 Measurements of zinc content of erythrocytes permit estimation of amount of carbon anhydrase in animal blood. Margin of error in subject method for measurement was ± 2 - 3%. When two or three measurements are made this margin of error can be cut to ± 1 - 1.5%. From 0.5 to 1 g of erythrocytes is necessary for the measurements. Submitted 21 Jul 1947. FDB 64T58	USSR/Medicine - Amino Acids Medicine - Microorganisms Jan/Feb 1948 "The Problem of the Synthesis of Amino Acid From Keto Acids and Ammonium Salts in Microorganisms," Z. G. Mogilevskaya, Lab of Chem of Tissues, Inst of Biol and Med Chem, Acad Med Sci USSR, Moscow, 3 pp "Biokhim" Vol XIII, No 1 Determined that there is the formation of large number of ammonium bonds when washed suspensions of B. coli communis, and B. coli communior are incubated in the presence of ammonium carbonate, glucose, alpha-ketoglutaric acid. Under anaerobic FDB 64T59	

RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Medicine - Enzymes Medicine - Leukocytes	Jan/Feb 1948	USSR/Medicine - Amino Acids (Contd) Jan/Feb 1948
"The Activity and Composition of Ferments in Plastids," N. M. Sisakyan, A. M. Kobyakova, Inst of Biochem imeni A. N. Bakh, Acad Sci USSR, Moscow, 7 pp		conditions the amount of ammonium which entered into compounds was significantly small. Incubation of washed suspensions of Cl. sporogenes in ammonium carbonate did not result in the formation of amino nitrate. Submitted 5 May 1947.
"Biokhim" Vol XIII, No 1		
Chloroplasts, chromoplasts, and leucocytes contain invertase, amylase, and protease. Degree of fermentative activity of plastid matter depends on its genesis and on the physiological condition of the plastid. Plastids can be considered as centers for biocatalysts, which take part in the process of cellular conversion in cycles during ontogenesis. Submitted 1 Sep 1947.		
FDB 64T60		FDB 64T59
USSR/Medicine - Glutathione Medicine - Kidney	Jan/Feb 1948	USSR/Metals Austenite Alloy Systems Apr 1948
"Biosynthesis of Glutathione in Surviving Animal Tissues," A. Ye. Braunshteyn, G. A. Shamshikova, A. L. Ioffe, Lab of Chem of Nitrogen Conversion, Inst of Biol and Med Chem, Acad Med Sci USSR, Moscow, 6 pp		"Mechanism of Eutectoid Disintegration of Alloyed Austenite," M. Ye. Blanter, 12 pp
"Biokhim" Vol XIII, No 1		"Zhur Tekh Fiz" Vol XVIII, No 4
Show that surviving pieces of mouse kidney in vitro form glutathione very rapidly under aerobic conditions. After 2-hr period 1 g of tissue will produce from 1 to 5 mg of glutathione. Submitted 20 Sep 1947.		Discusses Meylen's theory on the mechanism of subject disintegration. Experimental data rejects this theory. Theoretical studies show possibility of any type of progression for eutectoid disintegration. Primary alloy of the products of disintegration conforms to the average alloying of the
FDB 64T61		FDB 64T62
USSR/Metals Corrosion Hydrochloric Acid	Jan 1948	USSR/Metals (Contd) Apr 1948
"Corrosion of Metals by Hydrochloric Acid at High Temperatures," Kh. L. Tseytlin, Inst of Intermediate Org Products and Dyestuffs imeni K. Ye. Voroshilov, 7 pp		transfer structure of austenite, while the basic process of determining the speed of the eutectoid disintegration is based on the diffusion of carbon through the austenite alloy. Submitted 17 Nov 1947.
"Zhur Prik Khim" Vol XXI, No 1		
Vapor mixture of HCl and H ₂ O at 140-500° had very little effect on boiler steel. At temperatures of 300-500° stainless chrome steel is more resistant than boiler steel. At high temperatures dry HCl		
FDB 64T63		FDB 64T62
USSR/Metals (Contd)	Jan 1948	USSR/Metals Lead Alloys Metallography Feb 1948
vapor has greater effect on steel than water vapor mixture. Both types of vapors have great corrosive effects on lead. Submitted 24 Jan 1947.		"The Kinetic Method of Physical and Chemical Analysis, IV," M. B. Neyman, V. A. Shushunov, Sci Res Inst of Chem, Gor'kiy State U, 6 pp
		"Zhur Fiz Khim" Vol XXII, No 2
		Use kinetic method of physical chemical analysis to study ternary systems such as Na + Pb + K. Study relation of the induction period during reaction of ethylchloride vapors on alloys to the temperature of the reaction, the pressure exerted
FDB 64T63		FDB 64T64

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USSR/Metals (Contd)	Apr 1948	USSR/Metals Steel - Impregnation Silicates	Apr 1948
furnace charge. Steady descent of the charge may then be facilitated by creating zone of constant acidification by means of 16 tuyeres instead of 12.		"Effect of High-Silicon Silicates on the Properties of Steel," S. M. Baranov, Candidate Tech Sci, 7 pp	
"Stal'" No 4		"Stal'" No 4	
Impregnation of steel with high-silicon silicates (during deoxidation and along with other factors) exhibits certain effects on the crystallization of the metal and on operations during heat treatment. Regulating the content of these silicates (by lowering surface tension of the components) makes it possible to obtain steel with the desired properties for annealing, tempering, etc.			
FDB	64T69	FDB	64T70
USSR/Minerals Molds, Casting Sand	Apr 1948	USSR/Minerals Molds, Casting Ammonium Picrate	Apr 1948
"Use of the Fine Molding Sands of the Frolovsk Deposit," A. D. Popov, Candidate Tech Sci, Ural Inst of Ferrous Metals, 1 p		"Dunite Casting Mixtures," A. D. Popov, Candidate Tech Sci, Ural Inst of Ferrous Metals, 1/2 p	
"Stal'" No 4		"Stal'" No 4	
Use of fine casting sands (grain concentrations of more than 70% on screens No 140-200) for pig iron and medium steel casting should prove possible, and even expeditious insofar as this cuts down on the use of sand supplied from distant sources. The Frolovsk sand is not good for the production of fine cores because it cakes and the casting is difficult to knock out.		Dunite was first tested in the Ural Mash Zavod foundries in 1940 and has been used as molding material in the Serovskiy Metallurgical Plant for the casting of steel rollers. Dunite shows stable composition and remains unchanged after burning.	
FDB	64T71	FDB	64T72
USSR/Nuclear Physics - Isotopes Nuclear Physics - Theory	Jan 1948	USSR/Oceanology Sea Water	Jan 1948
"Some Rules on the Existence of Isotopes," L. A. Mindalev, Moscow Metropolitan Pedagogical Inst imeni V. P. Potemkin, 7 1/2 pp		"Research on the Equilibrium at 55° C of Na, Mg // Cl, SO ₄ · H ₂ O in a Marine System," O. K. Yanat'yeva, Inst of Gen and Inorg Chem, Acad Sci USSR, 9 pp	
"Zhur Obshch Khim" Vol XVIII (LXXX), No 1		"Zhur Prik Khim" Vol XXI, No 1	
Determines the rules for alternate increase and decrease of the n/p ratio and difference n - p for minimum and maximum isotopes, starting with element No 8. Tests to clarify the definition element-units. Law of nuclear neutron pairs was established for minimum isotopes. Studies to show the end of periodic systems of elements. Submitted 4 Dec 1946.		Full studies of the five-component marine system: Answers obtained for problems of the crystallization of sea water, vacuum vaporization, and purification of brine during the process of obtaining manganese chloride products. Submitted 28 Apr 1947.	
FDB	64T73	FDB	64T74
USSR/Petroleum Industry Bibliography	Apr 1948	USSR/Petroleum Industry Bibliography	Apr 1948
"New Books" 1/2 p		"Review of N. V. Tikhonravov's Book, 'Petroleum'," Prof V. N. Shohelkachev, 2 1/4 pp	
"Neft Khoz" No 4		"Neft Khoz" No 4	
Lists books published and to be published in the near future. Among the former are "Repairs to Pipe Petroleum Processing Equipment," by Gurevich, "Transportation of Petroleum and Gas," by Pritula, and "Mechanics of a Petroleum-Bearing Stratum," by Park (translation from the English).		Intended as reference book for middle schools in the field of the history and techniques of the petroleum industry. Very well written book.	
LC	64T75	LC	64T76

RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Petroleum Industry Geological Prospecting	Apr 1948	USSR/Petroleum - Well Drilling Drills, Oil Well
"Some Features of Similarity and Difference of the Devonian Petroleum Deposits of the Tuymazov and Yablonov Ravines," S. N. Shan'gin, 2 pp		"The Durability of Bearings of Triple-Cutting Bits," A. P. Dukhnin, 5½ pp
"Neft Khoz" No 4		"Neft Khoz" No 4
Both have similar increases in the productivity of the oil sands, also many similarities in hydrogeological characteristics. Tuymazov Devonian layers show much greater sand pressure than the Yablonov sands. In the Yablonov region it is possible to obtain oil by the gusher method, if care is taken to control the escaping gas and water.		Various data and results of practical application attest to the long wear that can be obtained from subject bits. Presents formula for theoretical calculation of the life of subject bits.
LC	64T77	LC
USSR/Petroleum Industry Oil Wells	Apr 1948	USSR/Petroleum Industry Petroleum - Well Drilling
"On the Question of Rapid Flushing of Oil Wells," A. M. Chegodayev, Groznyy, 5 pp		"Some Results in Employing Secondary Methods to Extract Petroleum," G. K. Maksimovich, 9½ pp
"Neft Khoz" No 4		"Neft Khoz" No 4
Describes methods to evaluate the effect of flushing and its technology that were first used at the Groz-nensk Petroleum Institute in 1944. Flushing operation is used to clean out the bores of wells.		Describes briefly the successes achieved from the use of secondary methods of oil drilling. States that by the end of 1947 oil wells will use about 280,000 cu m of materials such as gas or air, per 24-hr period to make possible the use of secondary methods. Brief notes from UkrNeft, MalGobekNeft, KrasnodarNeft, AzNeft, and the Shirokaya Balka oil fields.
LC	64T79	LC
USSR/Petroleum Industry Geological Prospecting	Apr 1948	USSR/Petroleum Industry Geological Prospecting
"Study of Stratum XII of the Tashkalinsk Petroleum Bed to Determine the Effect of Interference," G. M. Sukharev, N. Ye. Merkulov, Groznyy, 6½ pp		"StaroGrozNeft Trust in 1948" ½ p
"Neft Khoz" No 4		"Neft Khoz" No 4
General evaluation of the performance of Stratum XII. Describe briefly three separate studies conducted at the Tashkalinsk Petroleum beds. Subject stratum is similar to Stratum XVI of the Oktyabr'skiy deposits. Authors urge further study to determine reasons for interference in Stratum XII.		Drilling in 1947 in the western part of the oil deposits showed that the II subfold stratum would produce quantity of oil. Successes met in 1947 will result in 1½ times more survey and test drilling to be conducted in 1948. One of the chief tasks of 1948 will be surveys of XVI subfold stratum in the central portion of the oil deposits. Much survey work is planned for the regions around Solenaya
LC	64T81	LC
USSR/Petroleum Industry Geological Prospecting	Apr 1948	USSR/Petroleum Industry (Contd)
"Prospects of the Oil Capacity of the Fergana Valley in the Light of Results of Prospecting Work in 1940-1946," S. I. Il'in (Deceased), A. M. Gabrilyan, 7 pp		Valka. In 1948 it is hoped that results will have been obtained from secondary drilling of oil at StaroGrozNeft.
"Neft Khoz" No 4		
New data that was used to draw up a new geologic profile map of the above region. Some of the planned operations for the future are based on surveys and experience accumulated during subject years.		
LC	64T83	LC
		64T82

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USSR/Physics Charcoal - Adsorption Adsorption	Feb 1948	USSR/Physics Gases - Ignition Ignition	Feb 1948		
"Adsorbability and Physical and Chemical Properties of Vaporous Substances," M. M. Dubinin, D. P. Timofeyev, 11 pp		"Research on the Inflammability of Gas Mixtures," M. B. Neyman, Kh. M. Rubina, Inst of Chem Phys, Acad Sci USSR, 8 pp			
"Zhur Fiz Khim" Vol XXII, No 2		"Zhur Fiz Khim" Vol XXII, No 2			
Discusses some regularities that have appeared in the light of the potential theory of adsorption. Studies adsorption of series of organic vapors on two samples of activated charcoal, which were different in their degree of porosity. Determines rational criteria for the amount of adsorption. Submitted 26 Apr 1947.		Show the presence of convection when cool flame is horizontally propagated into a mixture of ether and air. Speed of propagation in this case can be determined using Grashoff's criteria. Establish method to calculate the speed of the propagation of flame in horizontal tubes of varying cross sections			
FDB	64T84	FDB	64T85		
USSR/Physics Waves, Electromagnetic Wave Propagation	Mar/Apr 1948	USSR/Physics (Contd)	Feb 1948		
"Propagation of Electromagnetic Waves Along Two Parallel Single-Conductor Lines," P. I. Kuznetsov, Moscow, 8 pp		and under various pressure conditions. Submitted 22 May 1947.			
"Prikl Mat i Mekh" Vol XII, No 2					
Presents formula to propagate electromagnetic waves. Discusses case where $n = 2$. Gives solution of the problem in contour integrals. If $A^2 - 4B$ are full quadratics, then the integral can be obtained through Lommel's function. Submitted 29 Apr 1947.					
FDB	64T86	FDB	64T85		
USSR/Physics Liquids - Flow Flow, Viscous	Mar/Apr 1948	USSR/Physics Conductivity, Thermal Mathematics, Applied	Mar/Apr 1948		
"The Nonlinear Boundary Problem of the Unsteady Movement of Viscous Incompressible Liquids," D. Ye. Dolidze, Tbilisi Math Inst imeni A. M. Ramadze, Acad Sci, Georgian SSR, 16 pp		"The Application of Triangular Sets to the Numerical Integration of the Equation of Thermal Conductivity," P. P. Yushkov, Leningrad, 4 pp			
"Prikl Mat i Mekh" Vol XII, No 2		"Prikl Mat i Mekh" Vol XII, No 2			
Studies the complete equation as submitted by Nav'-Stokes. Construction of so-called Green's tensor, representing graphically Green's equation for thermal conductivity. Result is nonlinear system of integral equations. Accomplishes solution of given problem		Mathematical discussion shows practical application of subject triangular sets. Submitted 28 Feb 1947.			
FDB	64T87	FDB	64T88		
USSR/Physics (Contd)	Mar/Apr 1948	USSR/Physics Wave Guides Attenuators	Apr 1948		
by series of successive approximations. Submitted 24 Oct 1945.		"Attenuation of H_{10} Waves in a Wave Guide Having Rectangular Cross Section," N. N. Malov, Moscow State Pedagogical Inst imeni V. I. Lenin, 4 pp			
		"Zhur Tekh Fiz" Vol XVIII, No 4			
		Calculates subject attenuation caused by multiple reflection of the leading wave from the sides of the wave guide. States that type H_{m0} and H_{0n} waves cannot be studied as frequent occurrences of type H_{mn} waves where m and n are equal to 0. Submitted 31 Oct 1947.			
FDB	64T87	FDB	64T89		

RESTRICTED	FDB Periodical Abstracts Scientific No 64	RESTRICTED
USSR/Physics Microscopes, Electron Lenses, Electromagnetic "The Form of a Field of Electrostatic Lenses," V. V. Sorokina, P. V. Timofeyev, All-Union Electrotech Inst, Moscow, 8 pp "Zhur Tekh Fiz" Vol XVIII, No 4 Departs from laws of mechanics to determine the electrostatic focusing of electronic streams. Determines form of a field of electrostatic lenses. This permits obtaining electronic representation with minimum aberration. Shows methods to calculate and construct new 'hyperbolic' lenses. Submitted 30 Apr 1947. FDB 64T90	USSR/Physics Induction Heating Cylinders "Calculation of Induction Heating on the Internal Surfaces of Hollow Cylinders," D. B. Mondrus, SevZapPromElektroPech, Leningrad, 7 1/2 pp "Zhur Tekh Fiz" Vol XVIII, No 4 Formulas for calculations of induction systems used in the induction heating of internal surfaces of hollow cylinders. Recommends formula that can be used for all three cases discussed: 1) homogeneous with side walls of uneven thickness, 2) homogeneous with limited side wall thickness, and 3) two-layer FDB 64T91	Apr 1948

FDB Periodical Abstracts Scientific No 64			
USSR/Physics (Contd)	Apr 1948	USSR/Physics (Contd)	Apr 1948
as method for preliminary approximation, the so-called "lateral" waves, and the reflection of waves at angles approaching the angles of full internal reflection. Submitted 17 Nov 1947. Submitted for publication in "Journal of Experimental and Theoretical Physics" 30 Jul 1947.		substitution of the boundary by transfer layer. Submitted 17 Nov 1947. Submitted to "Journal of Experimental and Theoretical Physics" 9 Oct 1947.	
FDB	64T95	FDB	64T96
USSR/Physics Wave Guides Filters	Apr 1948	USSR/Physics Wave Guides Wave Propagation	Apr 1948
"Experimental Research on the Wave Guide Properties of a Multisection Filter," V. V. Potemkin, Sci Res Inst of Phys, Moscow State U, 7 1/2 pp		"The Wave Guide Properties of Heterogeneous Media," P. Ye. Krasnushkin, 16 pp	
"Zhur Tekh Fiz" Vol XVIII, No 4		"Zhur Tekh Fiz" Vol XVIII, No 4	
Presents basic features of the theory, experimental equipment, the phenomenon of short-circuiting and dispersion of normal waves, three-dimensional pulses, and asymmetrical filters. Author is grateful to Prof P. Ye. Krasnushkin for his aid. Submitted 21 Aug 1947.		Applies the half-wave method to the problem of the propagation of waves in flat laminated media and describes studies made to determine approximate method for calculations in cylindrical laminated media. Method is based on representation of the wave field in the form of spectrum of normal wave,	
FDB	64T97	FDB	64T98
USSR/Physics Resonators, Hollow Space Circuits, Equivalent	Apr 1948	USSR/Physics (Contd)	Apr 1948
"Calculating Equivalent Circuits for a Hollow Resonator," N. N. Malov, Moscow State Pedagogical Inst imeni V. I. Lenin, 9 pp		whose discernible portion is analogous to the spectrum of normal wave in hollow pipes. Submitted 29 Jun 1947. Also submitted for publication in the "Journal of Experimental and Theoretical Physics" 7 Mar 1947.	
"Zhur Tekh Fiz" Vol XVIII, No 4			
Analyzes method for calculating parameters of hollow resonator and describes changes in its shape. Gives calculations for equivalent circuit of cylindrical resonator acted upon by standing type H_{011} wave. Submitted 31 Oct 1947.			
FDB	64T99	FDB	64T98
USSR/Physics Absorption	Jan 1948	USSR/Radio Oscillators Vacuum Tubes, Triode	Jan/Feb 1948
"Similarity Method for Calculating the Coefficients of Speed of Absorption," M. D. Kuznetsov, 10 pp		"The Limiting Wave Length of a Triode Oscillator," L. A. Kotomina, Candidate Tech Sci, 15 pp	
"Zhur Prik Khim" Vol XXI, No 1		"Radiotekh" Vol III, No 1	
Object of studies was to determine equation for calculating the coefficient of speed of absorption. Submitted 18 Apr 1947.		Study of the frequency range within which it is possible to effectively operate the triode oscillator. Discusses various fundamental factors that determine its range, namely the influence of electron inertia, the virtual cathode, output impedance (plate resistance) of the tube, electron-optical and geometrical dissimilarities, and the parameters of the cathode. Submitted 26 Apr 1947.	
FDB	64T100	FDB	64T101

FDB Periodical Abstracts Scientific No 64		RESTRICTED	
USSR/Radio Circuits, Trigger Vacuum Tubes - Operation	Jan/Feb 1948	USSR/Radio Antennas, Dipole Mathematics, Applied	Jan/Feb 1948
"Resistance Trigger Circuits," S. A. Drobov, Candidate Tech Sci, 9 pp		"Approximate Calculation of the Mutual Effect Between Antennas," G. T. Markov, Candidate Tech Sci, 4 pp	
"Radiotekh" Vol III, No 1		"Radiotekh" Vol III, No 1	
Introduces ideas on the fixed and dynamic characteristics of trigger systems. Analysis of the specified characteristics permits correct selection of the operation point of the tubes in various practical applications. Submitted 16 Jul 1947.		Gives approximation formulas for the mutual effect between antennas, in particular, arbitrarily oriented symmetrical vibrators (dipoles) situated far apart from each other. Submitted 21 Jul 1947.	
FDB	64T102	FDB	64T103
USSR/Radio Communications Bibliography	Jan/Feb 1948	USSR/Radio Cables, Coaxial Television	Jan/Feb 1948
"Review of P. N. Ramlau's Textbook 'Radio Engineering'," K. M. Vilenskiy, Engr, 5 pp		"Propagation of Signals in a Coaxial Cable," Prof L. A. Zhekulin, Dr Tech Sci, 14 pp	
"Radiotekh" Vol III, No 1		"Radiotekh" Vol III, No 1	
Critical reviewer states that it is impossible to list all the errors and discrepancies appearing in the textbook. That the figures in the book are drawn carelessly, which in themselves lead to erroneous conception of the various circuits and systems. Nevertheless, according to Vilenskiy, this book has		Discusses nonstationary processes in coaxial cables, arising during transmission of television signals. Suggests grapho-analytical approximation method to determine the fundamental operator equation for the problem. Studies distortion of signals during their propagation along the cable. Describes	
FDB	64T104	FDB	64T105
USSR/Radio (Contd)	Jan/Feb 1948	USSR/Radio (Contd)	Jan/Feb 1948
been approved by the Administration for the Training Schools of the Ministry of Communications as textbook for higher technical schools of railroad transport. Submitted 10 Aug 1947.		method to conform reflections during determination of primary and secondary parameters of cables with cylindrical surfaces of arbitrary shapes. Submitted 16 Jul 1947.	
FDB	64T104	FDB	64T105
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ID	Intelligence Division Library	ID	Intelligence Division Library
AMC	Air Documents Division, Air Materiel Command	AMC	Air Documents Division, Air Materiel Command
ST	Reference Division, State Department	ST	Reference Division, State Department
RM	Bureau of Mines, Department of Interior	BM	Bureau of Mines, Department of Interior
BS	National Bureau of Standards	BS	National Bureau of Standards
SI	Smithsonian Institution	SI	Smithsonian Institution
LC	Library of Congress	LC	Library of Congress
FDB	Foreign Documents Branch, CIA	FDB	Foreign Documents Branch, CIA
COM	Department of Commerce	COM	Department of Commerce
AF	A-2 Library, USAF	AF	A-2 Library, USAF